

“This is only a **preview** of the exam questions. To take the actual exam, please refer back to the bulletin and click on the ‘**Click here to go to the Internet Exam**’ link at the bottom of the bulletin.”

## **Assistant and Associate Telecommunications Engineer**

### **Office of the Chief Information Officer (OCIO)**

#### **Service-wide**

### **Training and Experience Evaluation**

The California civil service selection system is merit-based, and eligibility for appointment is established through a formal examination process. The service-wide Assistant and Associate Telecommunications Engineer examination consists of a Training and Experience evaluation used to evaluate your education, training and experience.

This Training and Experience Questionnaire is a scored component accounting for 100% of your rating in this examination. It is important to complete the questionnaire carefully and accurately. Your responses are subject to verification before appointment to a position.

#### **Section 1: Task Ratings for Assistant and Associate Telecommunications Engineer**

##### **Instructions:**

Using the rating scale(s) provided below, you will rate your experience performing specific job-related tasks.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and/or WORK EXPERIENCE whether paid or volunteer.

##### **Years of experience**

I have performed this task for:

- More than 5 years
- More than 3 years and up to 5 years
- More than 1 year and up to 3 years

More than 6 months and up to 1 year  
0 to 6 months

**Knowledge related to performing this task:**

**Extensive Knowledge**

I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task.

**Substantial Knowledge**

I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered.

**Moderate Knowledge**

I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations.

**Limited Knowledge**

I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively.

**No Knowledge**

I have no knowledge of how to perform this task or what it may entail.

1. Designing telecommunication systems (e.g., wireline, radio, fiber, satellite) to satisfy voice video, and/or data requirements of an end user.
2. Conducting telecommunications studies/surveys to predict system performance related to satisfying end user requirements utilizing appropriate tools or methodologies (e.g., computer simulation modeling, field strength measurements, analytical calculations).
3. Developing and writing technical specifications for telecommunication systems to satisfy end user requirements.
4. Developing and writing technical specifications for telecommunication equipment to satisfy end user requirements.
5. Applying appropriate standards to the design, implementation and management of telecommunications systems.
6. Developing engineering documentation and drawings (e.g., schematics, interconnections, physical layouts) to direct the installation and to facilitate the future enhancement and maintenance of telecommunication systems.

7. Analyzing technical data to determine if new equipment is compatible with other system components and recommend solutions to any inconsistencies.

## **Section 2: Knowledge, Skill and Ability Ratings for Assistant and Associate Telecommunications Engineer**

### **Instructions:**

Using the rating scale(s) provided below, you will rate your experience in accordance to specific job-related knowledge and abilities.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and/or WORK EXPERIENCE whether paid or volunteer.

### **Years of experience**

I have applied this knowledge or ability for:

- More than 5 years
- More than 3 years and up to 5 years
- More than 1 year and up to 3 years
- More than 6 months and up to 1 year
- 0 to 6 months

8. Knowledge of the theory and principles of telecommunications and electronics for the installation, maintenance, modification, and repair of equipment and systems.
9. Ability to apply the theory and principles of telecommunications and electronics for the installation, maintenance, modification, and repair of equipment and systems.
10. Knowledge of the design, uses, and functions of telecommunication systems and equipment (e.g., wireline, radio, fiber satellite, data communications, telephone systems) in order to perform essential work functions.
11. Knowledge of principles, practices, methods, terminology and trends in telecommunications systems engineering.
12. Knowledge of the field of electromagnetic wave propagation to effectively design and test telecommunication systems.

13. Ability to use computers and network equipment to configure, monitor, test and/or operate telecommunication systems.
14. Ability to write clearly and concisely using proper spelling, grammar, syntax and sentence structure.
15. Ability to develop and maintain constructive and cooperative working relationships.
16. Ability to write technical reports to communicate complex information to various audiences.
17. Ability to prioritize work assignments and/or problem solutions to ensure completion within established timeframes.
18. Ability to work independently on projects or assignments without close supervision or detailed instructions to achieve intended results.
19. Ability to perform job tasks during stressful working conditions (e.g., deadlines, multiple assignments).
20. Knowledge of mathematical principles used in design and implementation of telecommunication systems.
21. Ability to apply mathematical principles and statistical analysis to design and evaluate telecommunication systems.

### **Section 3: Task Ratings for Associate Telecommunications Engineer**

#### **Instructions:**

Using the rating scales provided below, you will rate your experience performing specific job-related tasks.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and/or WORK EXPERIENCE whether paid or volunteer

#### **Years of experience**

I have performed this task for:

More than 5 years

More than 3 years and up to 5 years

More than 1 year and up to 3 years  
More than 6 months and up to 1 year  
0 to 6 months

**Knowledge related to performing this task:**

**Extensive Knowledge**

I possess an expert knowledge level to the extent that I could effectively perform this task in the most difficult and complex situations; and I could instruct others on specific aspects of this task.

**Substantial Knowledge**

I possess an advanced knowledge level to the extent that I could effectively perform this task under the majority of circumstances or situations encountered.

**Moderate Knowledge**

I possess a sufficient knowledge level that would allow me to perform this task successfully in routine situations.

**Limited Knowledge**

I have some knowledge of how to perform this task, but may require additional instruction to apply my knowledge effectively.

**No Knowledge**

I have no knowledge of how to perform this task or what it may entail.

22. Conducting telecommunication systems studies to identify and evaluate alternatives, estimate costs, and recommend an optimal solution for satisfying end user requirements.
23. Developing and writing operational and/or functional requirements for telecommunication systems to satisfy end user requirements.
24. Evaluating vendor proposals for telecommunication systems and/or equipment to ensure compliance with technical specifications and end user requirements.
25. Conducting acceptance testing on equipment and systems to verify specification compliance.
26. Developing technical standards for telecommunication systems to ensure compliance with federal, state and local requirements, and for effective implementation, operation, and maintainability.
27. Providing technical advice and guidance to end users on telecommunication technologies and regulations for voice, video and data systems.

28. Providing technical assistance and instruction to field maintenance staff in testing, repairing, and resolving system issues.
29. Planning and coordinating the implementation of telecommunication projects based on operational needs of the end user utilizing project management methods and tools.
30. Developing hardware and/or software configurations to control the operation of telecommunication equipment and systems.
31. Acting as technical advisor to management on telecommunication issues.
32. Training clients/end users in the use and proper operation of telecommunication equipment and systems.
33. Preparing engineering reports (e.g., feasibility reports, functionality reports, study reports) for presentation to stakeholders.
34. Evaluating and discussing telecommunication systems, prototypes, and proposals with vendors and/or end users to determine applicability to current or future systems.

#### **Section 4: Knowledge, Skill and Ability Ratings for Associate Telecommunications Engineer**

##### **Instructions:**

Using the rating scale provided below, you will rate your experience in accordance to specific job-related knowledge and abilities.

Respond to each of the following statements by indicating how the statement applies to you. You are required to respond to every statement by marking one option from the scale(s) provided.

In responding to each statement, you may refer to your FORMAL EDUCATION, FORMAL TRAINING COURSES, and/or WORK EXPERIENCE whether paid or volunteer.

##### **Years of experience**

I have applied this knowledge or ability for:

- More than 5 years
- More than 3 years and up to 5 years
- More than 1 year and up to 3 years
- More than 6 months and up to 1 year
- 0 to 6 months

- 35. Ability to detect, eliminate, and prevent problems with telecommunication systems down to the component level to ensure operability of equipment.
- 36. Ability to detect, eliminate, and prevent sources of radio frequency interference using test equipment on radio, microwave, and communication systems to assure proper operation.
- 37. Knowledge of signal strength measurements and tolerances to effectively design, test, and maintain telecommunication systems.
- 38. Ability to interpret and apply provisions of State and federal rules and regulations affecting the design, implementation, and operation of telecommunication systems.
- 39. Knowledge of techniques (e.g., soldering, connectorizing, interpreting schematic diagrams) used in the installation and modification of telecommunication equipment and systems down to the component level.
- 40. Ability to modify and assemble telecommunication equipment to properly interface with communication systems in accordance with manufacturer specifications and engineering instructions.
- 41. Ability to effectively communicate in front of groups to facilitate an open exchange of ideas.
- 42. Ability to develop specific goals and plans to accomplish work.
- 43. Ability to adapt to changes in priorities, work assignments, and other factors.
- 44. Ability to work on multiple projects and/or assignments concurrently to enhance productivity and achieve intended results.
- 45. Knowledge of statistical analysis techniques in order to interpret data and make recommendations.